

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Original) A sensor for detecting the presence of an analyte in a solution, comprising:
a photonic crystal;
a light source capable of illuminating the crystal with a light beam having a predetermined wavelength and direction; and
a position sensing detector positioned so as to detect the position of the light beam after it is transmitted by the crystal.
2. (Original) The sensor according to claim 1 wherein said photonic crystal comprises a porous polymer prepared by polymerization of one or more polymerizable components around a colloidal template followed by the selective removal of said colloidal template.
3. (Original) The sensor according to claim 2 wherein said colloidal template is an ordered, monodisperse colloidal template and said porous polymer is an ordered, monodisperse macroporous polymer.
4. (Original) The sensor according to claim 3 wherein said ordered, monodisperse macroporous polymer comprises a material selected from the group consisting of poly(methyl methacrylate) and polystyrene.
5. (Original) The sensor according to claim 1 wherein said photonic crystal is selected and said light source is selected and positioned so as to create cause a displacement of said light beam of at least 2 μm when the refractive index of said photonic crystal changes by 0.002.

6. (Original) The sensor according to claim 1 wherein said photonic crystal is selected and said light source is selected and positioned so as to create cause a displacement of said light beam of at least 4 μm when the refractive index of said photonic crystal changes by 0.002.
7. (Original) A kit capable of being assembled to provide a sensor for detecting the presence of an analyte in a solution, comprising:
 - a photonic crystal or kit for making a photonic crystal;
 - a light source capable of illuminating the crystal with a light beam having a predetermined wavelength and direction; and
 - a position sensing detector capable of being positioned so as to detect the position of a light beam from the light source after it is transmitted by the crystal.
8. (Original) The kit according to claim 7 wherein said photonic crystal comprises a porous polymer prepared by polymerization of one or more polymerizable components around a colloidal template followed by the selective removal of said colloidal template.
9. (Original) The kit according to claim 7 wherein said colloidal template is an ordered, monodisperse colloidal template and said porous polymer is an ordered, monodisperse macroporous polymer.
10. (Original) The kit according to claim 9 wherein said ordered, monodisperse macroporous polymer comprises a material selected from the group consisting of poly(methyl methacrylate) and polystyrene.

11.-14 (Canceled)

15. (New) The sensor according to claim 1 wherein the sensor includes an array of light sources, each light source having an associated position-sensing detector.

16. (New) The sensor according to claim 15 wherein said light sources are tuned such that each source/detector pair is sensitive to composition changes in a different range of concentrations of a desired analyte.